

# Notice of Allowability

Application No.

09/787,309

Examiner

Wes Tucker

Applicant(s)

PORTNIAGUINE ET AL.

Art Unit

2623

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment A, filed July 1st, 2004.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☒ The drawings filed on 14 March 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's response to the last Office Action, filed July 1<sup>st</sup>, 2004 has been entered and made of record.
2. Applicant has amended Claim 1. Claims 6-18 were allowed in the previous office action. Claims 1-18 are pending.
3. Applicant's arguments, see Amendment A, filed July 1<sup>st</sup>, 2004, with respect to the rejection(s) of claim(s) 1-5 under U.S.C. 35 102b have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. Claims 1-18 are allowed. Reasons for allowance are given below.

### ***Allowable Subject Matter***

4. The following is an examiner's statement of reasons for allowance:
5. With regard to claim 1, U.S. Patent 5,761,346 to Moody discloses enhancement of a multidimensional image, said image being represented by a matrix comprising image parameters, wherein said matrix is mathematically manipulated to produce a solution to a linear ill-posed inverse problem to reduce blurring (column 1, lines 23-29, column 5, lines 36-45, and column 8, lines 23-33). Moody does not teach

or fairly suggest imposing a constraint on the solution to the linear ill-posed inverse problem so as to produce an image matrix, said constraint being based upon minimization of the area where strong variations and discontinuities between said image parameters occur.

6. With regard to claim 1, The document entitled "Inversion of Large-Support Ill-Posed Linear Operators Using a Piecewise Gaussian MRF" by Mila Nikolova, Jerome Idier, and Ali Mohammad-Djafari form IEEE Transactions on Image Processing, Vol. 7, No. 4, April 1998, hereinafter referred to as Nikolova discloses another method to deal with linear ill-posed inverse problems (p.571). Nikolova also discloses spatially variant operators (p. 574, paragraph above section entitled "B. Deterministic Surrogates"). Nikolova also discloses local minimizations (p.574, section IV. Original Graduated Nonconvexity). Nikolova does not however, teach or fairly suggest imposing a constraint on the solution to the linear ill-posed inverse problem so as to produce an image matrix, said constraint being based upon minimization of the area where strong variations and discontinuities between said image parameters occur.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James W. Hill M.D. Registration No. 46,396 on December 2, 2004.

In claim 16, at line 18, insert "inverse" between "said" and "sharpening".

### ***Conclusion***

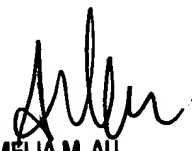
7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 703-305-6700. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wes Tucker  
12-1-2004

  
AMELIA M. AU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600